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EXAMINER

ART UNIT | PAPER NUMBER

16

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COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 4/8/93 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1, 3, 5-15, 17-42, 47, 49, 51-57, 59-65 & 67-77 are pending in the application.

   Of the above, claims 67-76 are withdrawn from consideration.

2. ☒ Claims 2, 4, 16, 43-46, 48, 50, 58 & 66 have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1, 3, 5-15, 17-42, 47, 49, 51-57, 59-65 & 77 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____ ; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

15. Claims 2, 4, 16, 43-46, 48, 50, 58 and 66 have been canceled in response to Applicants amendment.

16. Claims 1, 3, 5-6, 15, 19, 21, 25, 26, 35, 41, 42, 47, 49, 52, 59, 63 and 77 have been amended.

17. Claims 67-76 have been withdrawn as directed to a non-elected invention.

18. Claims 1, 3, 5-15, 17-42, 47, 49, 51-57, 59-65 and 67-77 are pending.

## REJECTIONS WHICH STILL REMAIN

19. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

A) The disclosure has not enabled a person of ordinary skill in the art to use these methods in their broadest application, specifically for in vivo use in humans. Applicants have not disclosed to one of ordinary skill in the art how to use the protein as a pharmaceutical or therapeutic agent. There is an insufficient written description of the invention with respect to the in-vivo operability of the protein to enable one of ordinary skill in the art to use Applicant's invention for use in humans. In order to provide proof of utility with regard to antibodies and their uses, either clinical in-vivo or in-vitro data, or a combination of these can be used. However, the data must be such as to convince one of ordinary skill in the art that the proposed method is sufficiently established, see In re Irons, 340 F.2d 924, 144 USPQ 351 (CCPA 1965), Ex parte Krepelka, 231 USPQ 746 (PTO Bd. Pat. App. & Inter. 1986) and Ex parte Chwang, 231 USPQ 751 (PTO Bd. Pat. App. & Inter. 1986). When the method is directed to humans, as the claims read in broadest scope do, the data must generally be clinical, however, adequate animal data would be acceptable in those instances wherein one of ordinary skill in the art would accept the correlation to human.

Thus, in a recognized animal model for testing purposes. The specification fails to enable the claimed methods of treatment using the disclosed antibody for in-vivo use. Applicants have provided no in-vivo clinical data. Pharmaceutical therapies in the absence of in-vivo data are unpredictable. Waldmann teaches that effective therapy using monoclonal antibodies has been elusive and describes limitations of murine antibodies in the therapy of human diseases due to the pharmacokinetic properties of rodent antibodies in human and human anti-mouse antibody responses. Waldmann also indicates that hopes for antibody-based treatment methods engendered by in-vitro and animal model studies have not correlated well with in-vivo clinical trail results in patients. Therefore it does not appear that the asserted utility of the claimed method for treating humans would be believable on its face to persons of skill in the art in view of the contemporary knowledge in the art. See MPEP 608.01(p).

21. Claims 1, 3, 5-15, 17-42, 47, 49, 51-57, 59-65 and 77 are rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification.

22. Claims 1, 3, 5-10, 13-15, 17-24, 26-32, 35-42, 47, 49, 51-57, 59-65 and 77 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to in vitro regulation of T cell responses, for the reasons given under 35 U.S.C. 112, first paragraph section a, above, see M.P.E.P. 706.03(n) and 706.03(z).

23. Claims 9, 10, 56 and 57 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to immobilized B7 antigen on CHO cells. Applicants have not provided a sufficient enabling disclosure for any other immobilized B7 source.

24. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to use in vitro with out the addition of a cytokine. Applicants disclosure does not enable the use of the method in vivo or the use of the method in conjunction with a cytokine.

25. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to use of the method in conjunction with anti-CD-2. Applicants disclosure does not enable the use of the method with anti-CD-3

26. Claims 35-40 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to the monoclonal antibody 9.3. The disclosure does not enable all possible antibodies to CD28.

27. Claims 1, 3, 5-10, 13-15, 17-24, 26-32, 35-42, 47, 49, 51-57, 59-65 and 77 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to inhibiting the interaction of CD28 positive cells with B7 positive cells in vitro. The claims are clearly outside of the enabling disclosure as being responsible for regulating all functional T cell responses, including production of cytokines, note specifically page 25, lines 25-35.

28. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to reacting CHO cells expressing B7 or fusion proteins with T-cells. The disclosure does not support the claims of reacting B-cells with T-cells.

29. Claims 19-22 and 59-62 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to a B7 antigen reactive ligand which is either:

A) monoclonal antibody BB-1 or a F(ab)2 fragment of said antibody, or

B) the CD28Ig fusion protein

The specification does not enable every possible ligand for the B7 antigen.

30. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to monoclonal antibody BB-1. The specification does not enable every possible antibody to the B7 antigen.

31. Claims 26-32 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to the CD28Ig fusion protein containing amino acid residues from about position 1 to 134 and a second amino acid sequence corresponding to the hinge CH2 and CH3 regions of human Ig C-gamma-1.

32. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

33. Claims 11 and 12 are rejected under 35 U.S.C. 103 as being unpatentable over Freeman et al. (CA) in view of Capon et al. (CE). Briefly the claims are drawn to a B7 fusion protein with the human immunoglobulin C-gamma-1. Freeman et al. teach the complete sequence of the B7 antigen see figure 3A. Freeman et al. do not teach a fusion protein of the B7 antigen to the human immunoglobulin C-gamma-1. Capon et al. teaches fusing human immunoglobulin C-gamma-1 to CD4 in order to prolong serum half life. Therefore it would have been prima facia obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Capon et al. to those of Freeman et al. to obtain a fusion of B7 with the human immunoglobulin C-gamma-1 in order to obtain a soluble B7 protein with a long serum half life, see entire Capon et al. document.

34. Claim 25 is rejected under 35 U.S.C. 103 as being unpatentable over Yokochi et al. (CD). Briefly the claims are drawn to a monoclonal antibody reactive with the B7 fusion protein. Yokochi et al. teach the BB-1 marker on B-lymphoblasts, see abstract. This marker was later called the B7 antigen. Yokochi et al. produces a monoclonal antibody to this BB-1 marker called monoclonal antibody BB-1 see materials and methods. Therefore Yokochi et al. renders the claim completely prima facia obvious to a person of ordinary skill in the art at the time the invention was made. A person of ordinary skill in the art would have been motivated to produce such an antibody to detect lymphoblastoid cells and cells of Burkitt's lymphoma which express the B7 antigen according to Yokochi et al. see title.

35. Claims 33 and 34 are rejection under 35 U.S.C. 103 as being unpatentable over Aruffo et al. (AV) in view of Capon et al. (CE). Briefly the claims are drawn to a CD28 fusion protein with the human immunoglobulin C-gamma-1. Aruffo et al. teach the complete sequence of the CD28 molecule see figure 2. Aruffo et al. do not teach a fusion protein of the B7 antigen to the human immunoglobulin C-gamma-1. Capon et al. teaches fusing human immunoglobulin C-gamma-1 to CD4 in order to prolong serum half life. Therefore it would have been prima facia obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Capon et al. to those of Aruffo et al. to obtain a fusion of CD28 with the human immunoglobulin C-gamma-1 in order to obtain a soluble CD28 protein with a long

serum half life, see entire Capon et al. document.

## NEW GROUNDS FOR REJECTION

36. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 as newly amended states "CD 28 positive", instead of -- CD28 positive --. It is suggested that Applicants correct this apparent typographical error.

## RESPONSE TO APPLICANTS ARGUMENTS

37. The objections to the specification under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure are as follows:

A) Concerning the issue of enablement "Applicants argue that the specification contains language such as "it is expected that administration of the B7 antigen will result in an effect similar to the use of anti-CD28 monoclonal antibodies reactive with the CD28 receptor in vivo" and "the specification, as originally filed, statements of utility which contain within it connotations of how to use", pointing to MPEP 608.01(p) at page 600-43, left column, first full paragraph. It is assumed that Applicants MPEP citation is to the first full paragraph under 35 U.S.C. 112 and not the first full paragraph on the page. Applicants are invited to read lines 9-13 under 35 U.S.C. 112 on this page where it points out that a more complete statement of how to use must be supplied if the art is unaware of successful treatments with chemically analogous compounds. The art is unaware of successful treatments with B7 as of the filing date of the instant invention. Further Applicants suggest that "the B7 antigen will result in an effect similar to the use of anti-CD28 monoclonal antibodies reactive with the CD28 receptor in vivo." Assuming arguendo that this statement is true and the two compounds are chemically analogous, Applicants are invited to consider Harris et al. who teach that there is "widespread acceptance that there is little future for the use of rodent mAbs for in vivo human therapy". Further Applicants are invited to consider Ex parte Aggerwal 23 USPQ2d 1338, footnote 7, where numerous potential problems are pointed out for in vivo protein use. Applicants expectations and connotations are not sufficient in the instant application where it is clear that there is high degree of unpredictability associated with the claimed invention. Applicants arguments on pages 30-31 have been considered but were not found persuasive in view of the above the rejection still stands.

B) The objection to the specification regarding improper incorporation by reference, has been withdrawn in response to Applicants arguments.

38. The rejection of claims 1, 3, 5-15, 17-42, 47, 49, 51-57, 59-65 and 77 under 35 U.S.C. 112, first paragraph for the reasons set forth in the objection to the specification, still stands.

39. The rejection of claims 1, 3, 5-10, 13-15, 17-24, 26-32, 35-42, 47, 49, 51-57, 59-65 and 77 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to in vitro regulation of T cell responses, still stands, for the reasons given under 35 U.S.C. 112, first paragraph section a, above.

40. The rejection of claims 19-24, 26-32 and 63-66 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to CD28 positive T cells has been withdrawn in response to Applicants amendments.

41. The rejection of claims 3-8, 41, 42 and 47-49 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to a B7 fragment or derivative which represents..., has been withdrawn in response to Applicants amendments.

42. The rejection of claims 9, 10, 56 and 57 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to immobilized B7 antigen on CHO cells, still stands. Applicants point out that many eukaryotic host cells can be used to express the B7 antigen. However the point is the specification has not enabled immobilization of B7 in every way, such as cross-linking it to sepharose-beads. It is suggested that the claims be limited to, i.e. "immobilized B7 antigen on eukaryotic host cells". Applicant is reminded that support for such an amendment must be found in the specification.

43. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to use in vitro with out the addition of a cytokine, still stands. Applicants argue that the specification does enable in vivo claims. However Applicants reference to page 21, lines 17-32 represents a paper experiment and does not provide any convincing experimental data which supports their claims. The specification provides at best only proposed experiments. Applicants are reminded that the claimed invention must be operable and in currently available form as of the date of filing. Paper experiments are not sufficient to enable the claimed invention. Further Applicants point out that Lenschow et

al. use a similar product to achieve the same results in mice. The construct of Lenschow et al. is not the same as Applicants. There are thermodynamic properties which distinct between the two constructs which may affect the folding properties of the claimed construct. Again Applicants paper experiment does not provide sufficient support for the claimed invention. Additionally, the Lenschow et al. reference demonstrates the effects in mice. Applicants claims are not limited to the mouse system, but instead read up to the human system. Further Applicants state that a person of ordinary skill in the art would have been able to use a lymphokine or cytokine with the claimed invention. Applicants are invited to point out where in the specification there is specific factual (non-paper experiment) enabling support for the use of a cytokine or lymphokine with the claimed invention.

44. The rejection of claim 15 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to use of the method in conjunction with anti-CD-2, still stands. Applicants cite mere suggestive segments of their disclosure. Applicant is invited to point out where in the specification there is specific factual (non-paper experiment) enabling support for the use of anti-CD-3.

45. The rejection of claims 35-40 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to the monoclonal antibody 9.3, still stands. In response to Applicants arguments there is no support in the specification that any other antibody other than antibody 9.3 will bind the CD28 protein in such a way as to elicit the disclosed results. Thus Applicants are clearly not entitled to every possible antibody which recognizes CD28 or to any antibody other than 9.3 which recognizes the same determinant as 9.3.

46. The rejection of claims 47-49, 51-57 and 77 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to a CD28 receptor ligand that is B7Ig or monoclonal antibody 9.3 has been withdrawn in response to Applicants amendment.

47. The rejection of claims 1, 3, 5-10, 13-15, 17-24, 26-32, 35-42, 47, 49, 51-57, 59-65 and 77 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to inhibiting the interaction of CD28 positive cells with B7 positive cells in vitro, still stands. Claims 47-49, 51-57 and 77 are not limited to CD28 positive T cells. Further the claims are not limited to in vitro application.

48. The rejection of claims 52-57 and 59-62 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for

claims limited to immune system diseases which are cause by the interaction of B7 with CD28 positive cells and cancers specifically responsive to inhibiting the B7/CD28 interaction, has been withdrawn in response to Applicants amendments.

49. The rejection of claim 66 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to inhibiting the interaction of B7 with CD28 positive cells, has been withdrawn in response to Applicants amendment cancelling the claim.

50. The rejection of claim 17 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to reacting CHO cells expressing B7 or fusion proteins with T-cells still stands. Applicants argue that the specification provides support for regulating T cell interactions with other cells through the use of B7 antigen, its fragments or derivatives. The specification only provides support for regulating the interaction between T cells and CHO cells expressing B7 or fusion proteins. There may be other factors present on B cells or other cells or properties intrinsic to the cells themselves which change the kinetic properties of the B7 antigen to allow it to bind stronger or not bind at all or bind as predicted from the paper experiments. Applicants specification does not provide any factual evidence supporting their proposals and therefore the rejection stands.

51. The rejection of claims 19-22 and 59-62 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to a B7 antigen reactive ligand which is either....., still stands. Applicants argue that the interaction with CTLA-4 is known in the art and therefore Applicants are entitled to a broad claim. First Applicants here admit that CTLA-4 was known in the art prior to their invention thus admitting that CTLA-4 is prior art, and as such Applicants are not entitled to the protein. Further Applicants are not entitled to every possible antibody to the B7 antigen or all ligands to the B7 antigen. As the claim reads any ligand to B7 is claimed. Thus any unknown B7 ligand as yet undiscovered is claimed. Applicants clearly are not entitled to this scope.

52. The rejection of claims 18 and 64 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to the B7Ig fusion protein, has been withdrawn in response to Applicants arguments.

53. The rejection of claim 25 under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to monoclonal antibody BB-1, still stands. Applicants argue that any antibody to B7 can be made from the deposited DNA. This is

true however the claim is dependent on claim 19 which requires that the antibody have the ability to regulate functional T cell responses. Applicants have not enabled every possible antibody to B7 which has this ability.

54. The rejection of claims 26-32 are rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to the CD28Ig fusion protein containing amino acid residues from about position 1 to 134 and a second amino acid sequence corresponding to the hinge CH2 and CH3 regions of human Ig C-gamma-1, still stands. Claims 26-32 pertain to the CD28 ligand. With respect to these specific claims the specification is limited to CD28Ig. Applicants arguments were considered but were not found persuasive.

55. The issue regarding Applicants obligation under 37 C.F.R. 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103, has been withdrawn in response to Applicants statement on page 10, first full paragraph which confirms "that all claims were commonly owned at the time of the invention".

56. The provisional rejection of claims 1, 3-15, 17-42, 47-49, 51-57, 59-66 and 77 under 35 U.S.C. 103 as being obvious over copending application Serial No. 07/547980, has been withdrawn in response to Applicants abandonment of 07/547980.

57. The provisional rejection of claims 1, 3-15, 17-42, 47-49, 51-57, 59-66 and 77 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-29 of copending application Serial No. 07/547,980, has been withdrawn in response to Applicants abandonment of 07/547980.

58. The rejection of claims 11 and 12 under 35 U.S.C. 103 as being unpatentable over Freeman et al. (CA) in view of Capon et al. (CE), still stands. First, Applicants argue that Freeman et al. do not teach that the cDNA can be expressed. However it is very clear in the art well in advance of applicants date of invention that cDNA molecules can be expressed in any number of different systems. Second, Applicants argue that Capon et al. do not teach that the methods can be used for producing B7Ig. Capon et al. teach a methodology that any person of ordinary skill in the art could apply to the B7 protein to generate B7Ig with more than a reasonable expectation of success. Applicants arguments concerning folding characteristics and interchain disulfide binding has been considered however a person of ordinary skill in the art would recognize these constraints and adjust the fusion

protein accordingly these processes are routine in making any fusion protein. The combination of references do indeed make a prima facie case of obviousness and would enable a person of ordinary skill in the art to make the claimed invention. The combination of references further provides motivation to make and use the claimed invention.

59. The rejection of claim 25 under 35 U.S.C. 103 as being unpatentable over Yokochi et al. (CD), still stands. The Yokochi et al. antibody would have been expected to bind the fusion protein especially considering that the fusion protein contains the extracellular domains of the B7 protein. Applicants have not provided support for an antibody which can bind both regions of the fusion protein as proposed on the last paragraph of page 26 "Yokochi's antibody cannot recognize and bind to both portions of B7 and Ig sequences because it binds only to B7". Yokochi et al. teach the claimed invention encompassed by claim 25 and enabled in the specification for this claim.

60. Claims 33 and 34 are rejection under 35 U.S.C. 103 as being unpatentable over Aruffo et al. (AV) in view of Capon et al. (CE). It is very clear in the art well in advance of applicants date of invention that cDNA molecules can be expressed in any number of different systems, even though the CD28 molecule may not have been routinely expressed routine methods are known which could be used. Capon et al. teach a methodology that any person of ordinary skill in the art could apply to the CD28 protein to generate CD28Ig with more than a reasonable expectation of success. The combination of references do indeed make a prima facie case of obviousness and would enable a person of ordinary skill in the art to make the claimed invention. The combination of references further provides motivation to make and use the claimed invention.

61. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

62. No claims are allowed.

63. Papers related to this application may be submitted to Group 180 by facsimile transmission. Papers should be faxed to Group 180 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 308-4227.

64. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald E. Adams whose telephone number is (703) 308-0570. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 180 receptionist whose telephone number is (703) 308-0196.

July 7, 1993

Donald E. Adams, Ph.D.

Y. CHRISTINA CHAN
PRIMARY EXAMINER
GROUP 180